

## **II. CLAIMS**

1. (Previously Presented) A method for transmitting a certain sequence of symbols, said method comprising,

-constructing a frame of a certain number of consecutive symbols,

-transmitting the symbols belonging to the sequence using at least two antennas,

-wherein the transmission of each symbol of the sequence of symbols is with a certain transmission pattern that indicates through which transmission antenna each transmitted symbol is transmitted,

-starting the transmission of the sequence of symbols from a predefined antenna, and

-enabling a receiver to associate a correct transmission antenna specific channel coefficient with each transmitted symbol by starting the transmission pattern from the beginning in the beginning of each frame.

2. (Previously Presented) A method according to claim 1, wherein:

-the length of the transmission pattern is shorter than the length of a frame, and

-the length of the frame is not a multiple of the length of the transmission pattern,

said method further comprising during each frame:

-repeating the transmission pattern until the length of the rest of the frame, which length is the length of the transmission pattern multiplied by the number of the repetition times within the frame subtracted from the length of the frame, is less than the length of the transmission pattern, and

-thereafter using only a certain part having a length which is the length of the rest of the frame of the transmission pattern.

3. (Previously Presented) A method according to claim 2, further comprising selecting the part of the transmission pattern from the beginning of the transmission pattern.

4. (Previously Presented) A method according to claim 2, wherein the length of the transmission pattern is an even number and the length of the frame is an odd number.

5. (Previously Presented) A method according to claim 4, further comprising transmitting the sequence of symbols using a first antenna and a second antenna, wherein the transmission pattern is an alternating pattern and the length of the transmission pattern is two.

6. (Previously Presented) A method according to claim 1, wherein each frame comprises a certain number of consecutive time slots and each time slot comprises a certain number of consecutive symbols, and said method further comprises transmitting one symbol belonging to the sequence of symbols in each time slot.

7. (Previously Presented) A method according to claim 1, wherein each frame comprises a certain number of consecutive time slots and each time slot comprises a certain number of consecutive symbols, and said method further comprises transmitting at least one symbol belonging to the sequence of symbols in each time slot.

8. (Previously Presented) A method according to claim 1, wherein each frame comprises a certain number of consecutive time slots and each time slot comprises a certain number of consecutive symbols, and said method further comprises transmitting at least in one of the time slots at least one symbol belonging to the sequence of symbols.
9. (Previously Presented) A method according to claim 1, wherein the length of the transmission pattern is larger than the length of the frame.
10. (Previously Presented) A method according to claim 1, said method further comprising starting the transmission of the sequence of symbols from the primary antenna that transmits a common pilot signal.
11. (Previously Presented) A method according to claim 1, said method further comprising transmitting the sequence of symbols in a downlink direction in a cellular network.
12. (Previously Presented) An apparatus comprising:  
  
a controller for controlling the transmission of each symbol of a sequence of symbols according to a certain transmission pattern through at least two antennas, said pattern indicating through which transmission antenna each transmitted symbol is transmitted,  
  
-an indicator for indicating the antenna from which to transmit the first symbol belonging to the sequence, and

-a starter configured to enable a receiver to associate a correct transmission antenna specific channel coefficient with each transmitted symbol by starting the transmission pattern from the beginning in the beginning of a frame.

13. (Previously Presented) A network element comprising:

a controller for controlling the transmission of each symbol of a sequence of symbols according to a certain transmission pattern,

at least two antennas to transmit said sequence, said pattern indicating through which transmission antenna each transmitted symbol is transmitted,

-an indicator for indicating the antenna from which to transmit the first symbol belonging to the sequence, and

-a starter configured to enable a receiver to associate a correct transmission antenna specific channel coefficient with each transmitted symbol by starting the transmission pattern from the beginning in the beginning of a frame.

14. (Previously Presented) A network element according to claim 13, wherein said network element comprises a radio network controller of a spread spectrum system.

15. (Cancelled)

16. (Previously Presented) A network element according to claim 14, wherein said network element comprises a base station of a spread spectrum system.

17. (Previously Presented) A computer program product comprising:

a computer useable medium having computer readable code embodied therein for causing a computer to activate functions of a device, the computer readable code in the computer program product comprising:

- a computer readable code for causing a computer to construct a frame of a certain number of consecutive symbols,

- a computer readable code for causing a computer to transmit the symbols belonging to the sequence using at least two antennas,

- wherein the transmission of each symbol of the sequence of symbols is with a certain transmission pattern that indicates through which transmission antenna each transmitted symbol is transmitted,

- a computer readable code for causing a computer to start the transmission of the sequence of symbols from a predefined antenna, and

- a computer readable code for causing a computer to enable a receiver to associate a correct transmission antenna specific channel coefficient with each transmitted symbol by starting the transmission pattern from the beginning in the beginning of each frame.

18. (Previously Presented) A method for transmitting a certain sequence of symbols, said method comprising:

- constructing a frame of a certain number of consecutive symbols,

- transmitting the symbols belonging to the sequence using at least two antennas, wherein the transmission of the sequence of symbols is with a certain transmission pattern,
- starting the transmission of the sequence of symbols from a predefined antenna, and
- starting the transmission pattern from the beginning in the beginning of each frame;

wherein the length of the transmission pattern is shorter than the length of a frame, and the length of the frame is not a multiple of the length of the transmission pattern,

and wherein said method further comprises during each frame:

- repeating the transmission pattern until the length of the rest of the frame, which length is the length of the transmission pattern multiplied by the number of the repetition times within the frame subtracted from the length of the frame, is less than the length of the transmission pattern, and
- thereafter using only a certain part having a length which is the length of the rest of the frame of the transmission pattern.

19. (Previously Presented) An apparatus comprising:

a controller for controlling the transmission of a sequence of symbols according to a certain transmission pattern through at least two antennas,

- an indicator for indicating the antenna from which to transmit the first symbol belonging to the sequence, and
- a starter for starting the transmission pattern from the beginning in the beginning of a frame;

wherein the length of the transmission pattern is shorter than the length of a frame, and the length of the frame is not a multiple of the length of the transmission pattern,

and wherein said apparatus is configured to repeat the transmission pattern until the length of the rest of the frame, which length is the length of the transmission pattern multiplied by the number of the repetition times within the frame subtracted from the length of the frame, is less than the length of the transmission pattern, and thereafter to use only a certain part having a length which is the length of the rest of the frame of the transmission pattern.

20. (Previously Presented) A network element comprising :

a controller for controlling the transmission of a sequence of symbols according to a certain transmission pattern,

at least two antennas to transmit said sequence,

- an indicator for indicating the antenna from which to transmit the first symbol belonging to the sequence, and

- a starter for starting the transmission pattern from the beginning in the beginning of a frame;

wherein the length of the transmission pattern is shorter than the length of a frame, and the length of the frame is not a multiple of the length of the transmission pattern,

and wherein said network element is configured to repeat the transmission pattern until the length of the rest of the frame, which length is the length of the transmission pattern multiplied by the number of the repetition times within the frame subtracted from the length of the frame, is less than the length of the transmission pattern, and thereafter to use only a certain part having a length which is the length of the rest of the frame of the transmission pattern.

21. (Previously Presented) A computer program product comprising:

a computer useable medium having computer readable code embodied therein for causing a computer to activate functions of a device, the computer readable code in the computer program product comprising:

- a computer readable code for causing a computer to construct a frame of a certain number of consecutive symbols,
- a computer readable code for causing a computer to transmit the symbols belonging to the sequence using at least two antennas,
- wherein the transmission of the sequence of symbols is with a certain transmission pattern,
- a computer readable code for causing a computer to start the transmission of the sequence of symbols from a predefined antenna, and
- a computer readable code for causing a computer to start the transmission pattern from the beginning in the beginning of each frame;

wherein the length of the transmission pattern is shorter than the length of a frame, and the length of the frame is not a multiple of the length of the transmission pattern,

and wherein said computer program product comprises computer readable code for causing a computer to repeat the transmission pattern until the length of the rest of the frame, which length is the length of the transmission pattern multiplied by the number of the repetition times within the frame subtracted from the length of the frame, is less than the length of the transmission pattern, and thereafter to use only a certain part having a length which is the length of the rest of the frame of the transmission pattern.